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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/731,669	12/08/2000	Tatsuo Sato	108079	1578

25944 7590 04/29/2002

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EXAMINER

NGUYEN, HUNG

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 04/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/731,669

Applicant(s)

SATO, TATSUO

Examiner

Henry Hung V Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 1-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-35 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of group II (claims 19-35) in Paper No. 9 is acknowledged. The traversal is on the ground(s) that "the search and examination of the entire application could be made without serious burden". This is not found persuasive because invention I is drawn explicitly to a gas replacement apparatus/method whereas the invention II is drawn to an exposure apparatus and method. As such, the distinct and separate searches are quite extensive and places a serious burden on the examiner in regard to both search and examination.

The requirement is still deemed proper and is therefore made FINAL.

Abstract

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because the following legal phraseology should be omitted:

"comprises" line 1.

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Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 19-23, 26-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 19, 26, 29 and 32, the recitation of "gas having low absorption characteristic with regard to exposure light" render the claims indefinite since the claims do not include any comparison point, simply put "low absorption" but it is not clearly understood "low absorption" is comparing to what? The claims do not circumscribe a particular area but only establish, at best, one end point by reciting that there is a gas present and it has "low absorption characteristic with regard to exposure light" but the claims do not "close the circle", i.e. "circumscribe" the particular area by establishing what the "low" is relative to.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 19, 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyaji et al (U.S.Pat. 5,559,584) in view of Chiba et al (U.S.Pat. 6,337,161) and further in view of Klebanoff et al (U.S.Pat. 6,153,044).

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With respect to claims 19, 24-25, Miyaji et al (fig.5) discloses an exposure system/method for transforming a pattern formed on a mask onto a substrate comprising substantially all basic features of the instant claims such as: a closed chamber having at least one of a first space (1) for accommodating a mask including an optical path of exposure light; a second space adjacent to the first space (12). Miyaji et al lacks to show a protecting member, which is provided by a frame for protecting the mask from being contaminated and a gas source for replacing a gas in the space between the protecting member and mask with an inert gas. However, these structures are well known per se. For example, Chiba et al teaches a pellicle (7) provided via a frame (6) for protecting the mask (1) (see fig.1). Klebanoff et al teaches a system having a reticle protecting system for keeping the reticle from particle contamination and "at least" one gas inlet such as valve for replacing a gas in the space between the protection member and the mask with an inert gas such as H₂, He or Ne (see abstract and col.5, lines 26-32). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Miyaji, Chiba and Klebanoff to obtain the invention as specified in claims 19, 24-25 for the purpose of keeping the reticle from being contaminated and whereby improving the quality of the images to be printed.

8. Claims 20-23, 26-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyaji et al (U.S.Pat. 5,559,584) in view of Chiba et al (U.S.Pat. 6,337,161), further in view of Klebanoff et al (U.S.Pat. 6,153,044) and further in view of Sakai et al (U.S.Pat. 4,737,824).

With respect to claims 20-23, 26-35, Miyaji as modified by Chiba and Klebanoff comprising substantially all of the limitations of the instant claims as discussed except for a deformation measuring device for measuring deformation of the reticle protection member and a

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controlling device for controlling of a gas supply to the chamber surrounding the protection member and the mask so that deformation of the protection member is compensated. Sakai (fig.1 and 2) discloses a surface shape controlling system used in an exposure apparatus for correcting the deformation of a wafer and comprising: a flatness measuring device (10) for detecting the deformation of the substrate; a pressure chamber (2b) for correcting the deformation of the wafer wherein the output signal of the deformation detecting device is inputted to a computing device (12) which calculates the deformation of the surface of the wafer and a control device (7-9, 11) for controlling the pressure in the chamber in accordance with the output of the computing device thereby correcting the deformation of the wafer (see col.4, lines 10-19). Since the wafer and reticle protecting member/pellicle having a similar problem of deformation occurring during the exposure, the solving solution for the wafer would be the same for the reticle protection member. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the device for preventing the deformation of a wafer as taught by Sakai into exposure system/method as disclosed by Miyaji and modified by Chiba and Kebanoff for the purpose of preventing the deformation of the reticle protection member and thus reducing the operation cost of the exposure apparatus.

Prior Art Made of Record

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yoo (U.S.Pat. 6,340,541), Wang (U.S.Pat. 5,453,816) and Chiba et al (U.S.Pat. 6,317,479) discloses protecting device for mask and have been cited for technical background.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry Hung V Nguyen whose telephone number is 703-305-6462. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.

hvn
April 25, 2002



RUSSELL ADAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800